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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,130	02/24/2004	Akira Mitsui	IIP-114-A	1663

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EXAMINER

KRAUSE, JUSTIN MITCHELL

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



<b>Office Action Summary</b>	<b>Application No.</b> 10/785,130	<b>Applicant(s)</b> MITSUI, AKIRA	
	<b>Examiner</b> Justin Krause	<b>Art Unit</b> 3682	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |



**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riedl (US Patent 5,010,778) in view of Sandstrom (US Patent 4,647,247).

Riedl discloses vibratory mechanism comprising: vibratory shafts (2,3), which are stored within a roll (1) and are arranged symmetrically across a rotation axis of the roll;

fixed eccentric weights fixed (15a) to ones of the respective vibratory shafts;  
rotatable eccentric weights (15b) rotatably attached to ones of the respective vibratory shafts;

rotation controllers (16) controlling a range of movement of the rotatable eccentric weights;

and an eccentric moment controller (see fig 3) which changes an eccentric moment around the vibratory shaft depending on a rotation direction of the vibratory shafts.

Regarding claim 2, a first vibratory shaft and a second vibratory shaft are stored in the roll, and the first vibratory shafts is arranged at a 180 deg. opposite position across a rotation axis of the roll with respect to the second vibratory shaft, (shown in fig 1)



a total eccentric moment around the first vibratory shaft is substantially the same as a total eccentric moment around the second vibratory shaft, when the first vibratory shaft and the second vibratory shaft are rotated in the one direction, a total eccentric moment around the first vibratory shaft is substantially the same as a total eccentric moment around the second vibratory shaft, when the first vibratory shaft and the second vibratory shaft are rotated in the reverse direction, (col 3, lines 46-51)

wherein the total eccentric moment around the first vibratory shaft is obtained by subtracting an eccentric moment of the fixed eccentric weight from an eccentric moment of the rotatable eccentric weight and the total eccentric moment around the second vibratory shaft is obtained by subtracting an eccentric moment of the rotatable eccentric weight from an eccentric moment of the fixed eccentric weight, when the first vibratory shaft and the second vibratory shaft are rotated in the one direction, and

the total eccentric moment around the first vibratory shaft is obtained by adding an eccentric moment of the fixed eccentric weight to an eccentric moment of the rotatable eccentric weight and the total eccentric moment around the second vibratory shaft is obtained by adding an eccentric moment of the rotatable eccentric weight to an eccentric moment of the fixed eccentric weight, when the first vibratory shaft and the second vibratory shaft are rotated in the reverse direction.

Regarding claim 3, respective rotatable eccentric weights of the first vibratory shaft and the second vibratory shaft are allowed to rotate around the first vibratory



shaft and the second vibratory shaft, respectively, within limits of 0 to 180 deg (Col 3, line 39)

an eccentric moment around the first vibratory shaft of the fixed eccentric weight is substantially the same as an eccentric moment around the second vibratory shaft of the rotatable eccentric weight (col 3, lines 46-51 and Col 4, lines 8-12), and

an eccentric moment around the first vibratory shaft of the rotatable eccentric weight is substantially the same as an eccentric moment around the second vibratory shaft of the fixed eccentric weight. (col 3, lines 46-51 and Col 4, lines 8-12)

Regarding claim 4, a first vibratory shaft (2) and a second vibratory shaft (3), which are stored within a roll (1) and are arranged symmetrically across a rotation axis of the roll (fig 1);

a first fixed eccentric weight (15a) and a second fixed eccentric weight (15a), which are fixed to the first vibratory shaft and the second vibratory shaft (Col 3, lines 66-68 makes clear that the arrangement of parts on shafts 2 and 3 is the same), respectively;

a first rotatable eccentric weight (15b) and a second rotatable eccentric weight (15b), which are rotatably attached to the first vibratory shaft and the second vibratory shaft, respectively;

a first rotation controller (16), which is provided on the first fixed eccentric weight and controls a first phase difference between the first fixed eccentric weight and



the first rotatable eccentric weight depending on the rotation direction of the first vibratory shaft; and

a second rotation controller (16), which is provided on the second fixed eccentric weight and controls a second phase difference between the second fixed eccentric weight and the second rotatable eccentric weight depending on the rotation direction of the second vibratory shaft.

Regarding claim 5, first rotation controller and the second rotation controller hold the first phase difference and the second phase difference at 0 deg., respectively, when the first vibratory shaft and the second vibratory shaft rotate in one direction, and the first rotation controller and the second rotation controller hold the first phase difference and the second phase difference at 180 deg., respectively, when the first vibratory shaft and the second vibratory shaft rotate in a reverse direction. (shown in fig 2 and Col 4, lines 16-19 states the motor is reversible)

Regarding claim 6, an eccentric moment around the first vibratory shaft of the fixed eccentric weight is substantially the same as an eccentric moment around the second vibratory shaft of the rotatable eccentric weight (col 3, lines 46-51 and Col 4, lines 8-12), and



an eccentric moment around the first vibratory shaft of the rotatable eccentric weight is substantially the same as an eccentric moment around the second vibratory shaft of the fixed eccentric weight. (col 3, lines 46-51 and Col 4, lines 8-12)

Regarding claim 7, the vibratory mechanism is in a roll (1)

Riedl does not disclose the vibratory shafts rotating in the same direction.

Sandstrom teaches a vibratory roll with shafts (3a and 3b) which are rotated in the same direction (see fig. 5) for the purpose of not producing any significant translation force at the drum axis in any position (col 5, lines 21-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to rotate the shafts in the same direction as taught by Sandstrom, the motivation would have been to not produce significant translation force at the drum axis in any position of the eccentric weights.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Riedl in as modified by Sandstrom, and in further view of Fuchigami (US Patent 4,108,009) or Orzal (US Patent 4,568,218), independent of each other.

Riedl discloses all of the claimed subject matter as described above, including a roll (1).

Fuchigami and Orzal teach vibratory rollers containing vibratory mechanisms for compacting soil, earth, asphalt, etc. (see figures) and it therefore would have been



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obvious to one of ordinary skill in the art at the time the invention was made to employ the vibratory mechanism of Riedl in a vibratory roller as taught by Fuchigami or Orzal to compact soil, earth, asphalt, etc.

4. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riedl as modified by Sandstrom in view of Balz (US Patent 4,461,122).

Riedl as modified by Sandstrom discloses all of the claimed subject matter as described above, but does not disclose the fixed eccentric weight attached to one of the vibratory shafts is larger in size than the rotatable eccentric weight attached to the one of the one of the vibratory shafts and the fixed eccentric weight attached to another of the vibratory shafts is smaller than said rotatable eccentric weight rotatably attached to the other vibratory shaft.

Balz teaches use of 2 sets of eccentric weights where one movable eccentric weight is larger in size and mass than the fixed eccentric weight, and the other movable eccentric weight is smaller than the other fixed eccentric weight for the purpose of altering the intensity of the vibrations directionally (Col 3, lines 36-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Riedl and Sandstrom and incorporate a fixed eccentric weight attached to one of the vibratory shafts is larger in size and mass than the rotatable eccentric weight attached to the one of the one of the vibratory shafts and a fixed eccentric weight attached to another of the vibratory shafts is smaller



than the rotatable eccentric weight rotatably attached to the other vibratory shaft for the purpose of altering the intensity of the vibrations directionally.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-11 are have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK  
8/10/06



RICHARD RIDLEY  
SUPERVISORY PATENT EXAMINER